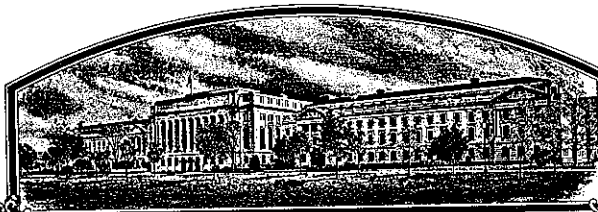


No.

8300089



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Northrup King Co.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'S30-31'



In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 30th day of April in
the year of our Lord one thousand nine
hundred and eighty-four.

Attest

Kenneth H. Evans
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0005

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

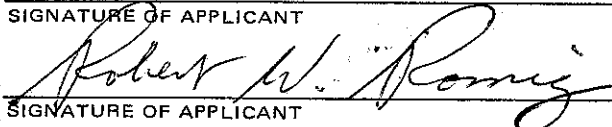
| | | | | | |
|---|--|---|--|---|--|
| 1. NAME OF APPLICANT(S) Northrup King Co. | | 2. TEMPORARY DESIGNATION 729178 | | 3. VARIETY NAME S30-31 | |
| 4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P. O. Box 959 Minneapolis, MN 55440 | | 5. PHONE (Include area code) 612-781-8011 | | FOR OFFICIAL USE ONLY PVPO NUMBER 8300089 | |
| 6. GENUS AND SPECIES NAME Glycine max | | 7. FAMILY NAME (Botanical) Leguminosae | | FILING DATE 3/28/83 TIME 9:30 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M. | |
| 8. KIND NAME Soybeans | | 9. DATE OF DETERMINATION March, 1982 | | FEES RECEIVED AMOUNT FOR FILING \$ 1,000 DATE 3/28/83 AMOUNT FOR CERTIFICATE \$ 500.00 DATE 4/10/84 | |
| 10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation | | | | 12. DATE OF INCORPORATION 1896 | |
| 11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware | | | | | |
| 13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Robert W. Romig Northrup King Co. P. O. Box 959 Minneapolis, MN 55440 | | | | | |
| 14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement </div> <div style="width: 48%;"> c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.) d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of the Variety </div> </div> | | | | | |
| 15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No </div> | | | | | |
| 16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No | | 17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input type="checkbox"/> Certified | | | |
| 18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? <div style="text-align: right;"> <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No </div> | | | | | |
| 19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? <div style="text-align: right;"> <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No </div> | | | | | |
| 20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties. | | | | | |
| SIGNATURE OF APPLICANT  | | | | DATE 4/21/83 | |
| SIGNATURE OF APPLICANT | | | | DATE <div style="text-align: right; font-size: 2em;">1</div> | |

EXHIBIT A

Origin and Breeding History of the Variety

- 1974-76 - We made the cross 'B216' x 'Davis' and advanced the population to F_6 . We practiced mass-selection for Group IV or earlier maturity in the F_3 generation. In October, 1976, we selected 50 plants of Group IV or earlier maturity.
- 1977 - We grew the 50 plant selections in F_7 progeny rows. We selected one of these, numbered 729178, on the basis of agronomic appearance to be tested in a preliminary Group III yield trial. This line was subsequently named S30-31.
- 1978-80 - We tested S30-31 in replicated yield trials at several corn belt locations and found it to yield well compared to other Group III varieties. We identified and confirmed the descriptive characteristics white flower color, grey pubescence color, tan pod color, yellow hilum color, and dull seed coat luster.

In 1980 we made a small increase of S30-31 from 500 grams of carefully hand-rogued seed. We removed all plants not conforming to the variety description by roguing the increase block several times. Growth and maturity were uniform.

- 1981-82 - We continued to test S30-31 in Advanced Group III yield trials to confirm performance, early Group III maturity, and descriptive characteristics.

We grew Breeder Seed of S30-31 from the small increase produced in 1980. The field was carefully rogued.

We produced Foundation Seed of S30-31 in 1982. The Iowa Crop Improvement Association inspected the production fields and found them to meet the requirements for Foundation Seed. S30-31 was accepted as eligible for Certification by the National Soybean Variety Review Board on December 9, 1982.

Variety S30-31 is stable and uniform. No variants have been observed in five years of yield testing and three years of seed increase of S30-31.

We will maintain varietal purity by use of progeny rows as needed.

EXHIBIT B

Novelty Statement for the Variety

Variety S30-31 is most similar to Pella, Cumberland, and Agripro AP25. It has grey pubescence color vs. tawny for Pella, yellow hilum color vs. imperfection black for Cumberland, and white flower color vs. purple for Agripro AP25.

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION
 PLANT VARIETY PROTECTION OFFICE
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
 SOYBEAN (*Glycine max* L.)

| | | |
|--|---------------------------------|---|
| NAME OF APPLICANT(S) Northrup King Co. | TEMPORARY DESIGNATION 729178 | VARIETY NAME S30-31 |
| ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P. O. Box 959 Minneapolis, MN 55440 | | FOR OFFICIAL USE ONLY PVPO NUMBER 8300089 |

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,).

1. SEED SHAPE:



L



W



T

1 = Spherical (L/W, L/T, and T/W ratios = ≤ 1.2)
 3 = Elongate (L/T ratio > 1.2 ; T/W = ≤ 1.2)

2 = Spherical Flattened (L/W ratio > 1.2 ; L/T ratio = ≤ 1.2)
 4 = Elongate Flattened (L/T ratio > 1.2 ; T/W > 1.2)

2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) _____

6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1^a)2 = Type B (SP1^b)

9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) _____

11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☐ 21 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

13. FLOWER COLOR:

☐ 1

1 = White

2 = Purple

3 = White with purple throat

14. POD COLOR:

☐ 1

1 = Tan

2 = Brown

3 = Black

15. PLANT PUBESCENCE COLOR:

☐ 1

1 = Gray

2 = Brown (Tawny)

16. PLANT TYPES:

☐ 21 = Slender ('Essex'; 'Amsoy 71')
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

17. PLANT HABIT:

☐ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

18. MATURITY GROUP:

☐ 0 ☐ 6

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

☐ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)☐ 1Bacterial Blight (*Pseudomonas glycinea*)☐ 0Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

☐ 1Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)☐ 0

Race 1

☐

Race 2

☐

Race 3

☐

Race 4

☐

Race 5

☐

Other (Specify)

☐ 0Target Spot (*Corynespora cassicola*)☐ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 0Powdery Mildew (*Microsphaera diffusa*)☐ 1Brown Stem Rot (*Cephalosporium gregatum*)☐ 0Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

- ☒ 1 Pod and Stem Blight (*Diaporthe phaseolorum* var; *sojae*)
- ☒ 1 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ☒ 1 Race 1 ☒ 1 Race 2 ☒ 1 Race 3 ☒ 1 Race 4 ☒ 1 Race 5 ☒ 1 Race 6 ☒ 1 Race 7
- ☒ 1 Race 8 ☒ 1 Race 9 ☐ Other (Specify) _____

VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ☐ 0 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ☒ 1 Race 1 ☒ 1 Race 2 ☒ 1 Race 3 ☒ 1 Race 4 ☒ 1 Other (Specify) _____
- ☐ 0 Lance Nematode (*Hoplolaimus Colombus*)
- ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ OTHER DISEASE NOT ON FORM (Specify): _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☒ 1 Iron Chlorosis on Calcareous Soil
- ☐ Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

| CHARACTER | NAME OF VARIETY | CHARACTER | NAME OF VARIETY |
|-------------|-----------------|-----------------------|-----------------|
| Plant Shape | B216 | Seed Coat Luster | B216 |
| Leaf Shape | Cumberland | Seed Size | Williams 79 |
| Leaf Color | B216 | Seed Shape | B216 |
| Leaf Size | Cumberland | Seedling Pigmentation | B216 |
| | | | |

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

| VARIETY | NO. OF DAYS MATURITY | PLANT LODGING SCORE | CM PLANT HEIGHT | LEAFLET SIZE | | SEED CONTENT | | SEED SIZE G/100 SEEDS | NO. SEEDS/POD |
|-------------------------------------|----------------------|---------------------|-----------------|--------------|-----------|--------------|-------|-----------------------|---------------|
| | | | | CM Width | CM Length | % Protein | % Oil | | |
| Submitted | 127 | 2.5 | 99 | 4.5 | 9.2 | 40.0 | 20.4 | 14.9 | 2-3 |
| Pella Name of Similar Variety | 126 | 2.1 | 99 | 5.0 | 9.2 | 37.5 | 21.0 | 17.6 | 2-3 |

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

EXHIBIT D

Additional Description of the Variety

Soybean variety S30-31 is an early Group III variety maturing about one day later than Pella or five days earlier than Williams 79. S30-31 has excellent seedling emergence, and good field resistance or tolerance of *Phytophthora* root rot. It has normal levels of tolerance to the herbicides Sencor, Basagran, and Blazer.